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NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER



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Summaries of Sites at Opito, Sarah's Gully, and Great Mercury Island

By R.C. Green

In the last eight years a small area of the east coast of the Coromandel Peninsula has been the scene of fairly intensive archaeological investigation. This is particularly true for Opito Beach, Sarah's Gully, and Great Mercury Island. While a field survey of Great Mercury Island was carried out in which some 25 to 30 sites were recorded (Golson 1955: 350) this was prior to the Association's Site Record scheme and this information has never found its way into the local files. More serious is the fact that during the University of Auckland's Archaeological Society excavations at Sarah's Gully and Opito no consistent field recording programme ever developed and no sites from this region ever found their way into the files of the Association either. Meanwhile, information on these sites has become somewhat scattered throughout the literature, so that the person unfamiliar with them experiences some difficulty in assembling the relevant information. Also, efforts on the part of Mr. Hans Pos and myself, and in particular the work of Mr. R.G.W. Jolly, have added considerably to our information about other sites in this area. All of these factors seem excellent reasons for placing on record here an attempt by myself to assign the principal sites numbers and provide each with an individual identity and location until such time as more complete details become available. In fact, I found it essential to develop this digest of information, which formed an appendix to my conference paper, in order to be able to assess our knowledge of the prehistoric sequence on the Coromandel Coast. I hope this summary will prove as useful to others as it has to myself and that further information or corrections to that which I have assembled will be forthcoming in subsequent issues of the Newsletter.

The site locations are indicated on the accompanying map according to number, but I have used in the text a name by which these sites have become known, as these names are more familiar and easier to recall.

Cormack's Midden

As this site has not been satisfactorily located, no site number has been assigned to it. It may or may not be one of the middens which we have identified.

- a. Bibliography: Owen, Sir Richard. 1856, "On Dinornis", part 6, Trans. of the Zoological Society, London, v. 4, part 4, p. 141-147. Duff, Roger. 1956. The Moa-hunter Period of Maori Culture, Wellington, p.250.
- b. Setting: oven exposed at depth of almost five feet on beach sand-cliff and associated with midden refuse.
- c. Stratigraphy: an upper sand layer three feet in depth:
a lower compacted layer of sandy earth.

- d. Economy: In the refuse of the lower stratum Cormack found femur and broken tibia of Dinornis gracilis (Owen) with bones of smaller birds, fish and shellfish.

Fishers' Midden (N40/4)

- a. Bibliography: Fisher, V.F., 1936 "Ethnologists' Report", Annual Report of the Auckland Institute and Museum, 1935-36, pp.18-19 and plate.
- b. Setting: toward the northern end of the beach at a spot now marked by a deflation basin in the sand. The spot is well back from the beach front and beside a small swampy creek.
- c. Stratigraphy: none on record but from plate, it appeared to have consisted of a dark black occupation layer a foot or more in thickness, buried under two to three feet of dune sand.
- d. Economy: not recorded.
- e. Portable artifacts: A large collection of portable artifacts from this site are stored at the Auckland War Memorial Museum and include a wide variety of one-piece hooks rendered in moa bone and a number of adzes in basalt from the local quarry which conform to Archaic types.
- f. Dating: from the materials recovered, the site would appear to be one of either the Developmental or Experimental phases.

Dentalium Shell Necklace "Workshop" (N 40/5)

- a. Bibliography: Scarlett, R.J., 1958. "A Dentalium Shell Necklace 'Workshop' ", Jour. of the Poly. Soc., v. 67, no.1, p.75.
- b. Setting: on ground well above beach level in foredunes at base of hill at extreme north end of the bay.
- c. Stratigraphy: none described, but site appears to be a working floor exposed by recent wind erosion.
- d. Economy: Moa bone fragments and shellfish are reported but no details are given.
- e. Portable artifacts: hundreds of tubes of Dentalium nanum (Hutton) in various stages of manufacture into necklace units, all associated with fragments of moa bone and obsidian flakes or knives.
- f. Dating: a workshop component of the Coromandel or Sarah's Gully Aspects of the Developmental or Experimental Phase.

Arthur Black's Midden (N 40/6)

- a. Bibliography: Golson, J., 1959. "Excavations on the Coromandel Peninsula", N.Z. Arch. Assoc. Newsletter, v.2, no.2, p.18.
Scarlett, R., 1962. "Interim list of Moa Species Identified from North Island Archaeological Sites", N.Z. Arch. Assoc. Newsletter, v.5, no. 4, p.246.
- b. Setting: toward the north end of the bay, on the low foredunes just above beach and on opposite side of creek from the Fisher Midden.
- c. Stratigraphy: none described, but it appears to have been a midden of rather shallow depth and of not more than two or three layers.
- d. Economy: Golson reports that "a small excavation was simultaneously conducted at a sandhill site further west along Opito Bay, where moa bone was again found in considerable quantity". These Scarlett identifies as Euryapteryx curtus and E. exilis.
- e. Portable artifacts: According to R.J. Scarlett these included files, fishhook pieces, and fragments of bone indicating the manufacture of fish-hooks.
- f. Dating: As the impression of this site is like that of the upper layers at Sarah's Gully, it has tentatively been assigned to the Sarah's Gully Aspect of the Experimental Phase.

Opito Site (N 40/3)

- a. Bibliography: Golson, J. "Excavations on the Coromandel Peninsula", op. cit., pp. 17-18.
Golson, J. 1959. "Culture Change in Prehistoric New Zealand" in Anthropology in the South Seas, J.D. Freeman and W.R. Geddes (eds.) New Plymouth, pp. 44-45.
Scarlett, R. "Interim list of Moa", op. cit. p. 246.
Trower, D. "Opito Beach: Two sites", N.Z. Arch. Assoc. Newsletter, v.5, no.1, pp. 43-46.
- b. Setting: As far as I have been able to determine the sites excavated by J. Golson, A. Black, R.G.W. Jolly and D. Trower are all the same. It is exposed at the back of the beach by high seas, but the site lies on the foredunes fronting the beach at a point about a hundred yards northwest of the creek mouth.
- c. Stratigraphy: Total depth of deposits some four and a half feet.
Layer 1 - recent sand cover and turf.
Layer 2 & 3 - high level late occupation.
Layer 4 - Divided into three deposits which in total form a composite layer 18 inches in thickness. This is the layer Golson assigns to his Archaic Phase.
Layer 4 A - A top layer less heavily affected by human activity.
Layer 4 B - A sand layer more or less dividing the two main cultural horizons of layer 4.

- Layer 4 C - A thinner and less continuous occupation spread at the bottom of the deposits which compensated for its modest proportions with a most immoderate content of archaeological material.
- d. Economy: Information about the upper levels has not been placed on record.
- Layer 4 A - "Moa bone in the uppermost layer of the series was less plentiful and comes in much smaller pieces."
- Layer 4 C - Contained moa egg shell, and a rich proportion of moa bone including Dinornis giganteus & hercules, D. struthoides and Euryapteryx curtus.
- Layer 4 (General) - Trower and Jolly, probably from this level recovered dog, rat, several varieties of bird, additional moa bone and the following range of shellfish: Cookia sulcata, Notovola novaezelandiae, Lunnella smaragda, Spisula equalateris and Cellana denticulata. There is also a fragment of what looks like ? Charonia capax. The impression is of a collection emphasising the rocky shore species at the expense of the mudflat species.
- e. Portable artifacts: Layer 2 and 3 - unfortunately very few recovered.
- Layer 4 - full range of archaic adzes, one-piece fishhooks with incurving points and three types of line attachment, single uniperforate lure hook point, shell copies of carcharodon shark teeth necklace units, bird bone tube necklace units, and imitation 'whale tooth' pendant, basalt flakes, chert, chalcedony, and obsidian flakes and sandstone files and abraders.
- f. Dating - by carbon 640 ± 50 radiocarbon years ago.
by pumice - all Loiseles or black pumice lies above the upper half of Layer 4 B (see Wellman 1962).
by obsidian - layer 4 B is younger than layer 4 G and layer 4 C is of the same order of thickness as obsidians in Layer IV or Level I of the Skipper's Ridge site.

Skipper's Ridge Site (N 40/7)

- a. Bibliography: Parker, R.H., 1959. "A New Site at Opito", N.Z. Arch. Assoc. Newsletter, v.2, no. 2, pp.18-20.
Parker, R.H. 1960 "Reconnaissance at Skipper's Ridge", N.Z. Arch. Assoc. Newsletter, v.3, no.2, pp. 39-41.
Parker R.H., 1962. "Aspect and Phase on Skipper's Ridge (Opito) and Kumara-Kaiamo (Urenui)". N.Z. Arch. Assoc. Newsletter, v.5, no.4.
- b. Setting: On the spur of low ridge rising above Otama stream and behind the foredunes which face onto the beach. Site N 40/3 is situated at the front of these foredunes and the Skipper's Ridge Sites is only a few hundred yards directly southwest of this rich midden.
- c. Stratigraphy: Parker and I both recognize three components at this site among the four layers he originally described.
- Level IV - or the Layer II occupation.
- Level III - or the Layer III occupation and probably the materials from the earlier 'Transitional' occupation as well.
- Level I - The Early Stage Materials sealed in by Layer IV.

- d. Economy: While there is no direct evidence for agriculture, the store pits associated with levels I and III may be interpreted as food store pits.
- Level IV - The following shell-fish are present in layer 2 fill:
 Frequent - Amphidesma subtriangulatum, Notovola novaezelandiae, Struthiolaria papulosa, Lunella smaragda,
 Infrequent - Neothaia scalaris, Maoricolpus roseus,
Cellana radians, Chione stutchburyi, Risellopsis varia
Zediloma sp. Struthiolaria vermus.
- Level III - The following shellfish are present in layer 3 fill:
 Frequent - The same as for Level IV.
 Infrequent - Risellopsis varia, Nerita melanotragus,
Cookia sulcata, Buccinulum sp.
- The dog and tuatara are also recorded for this layer.
- Level II - The following shellfish are present in a layer 4 fill of an underground store pit.
 Frequent - Cellana radians, Mytilus canaliculus,
Amphidesma subtriangulatum, Notovola novaezelandiae,
Struthiolaria papulosa, Lunella smaragda,
 Infrequent - Cellana denticulata, Saxostrea glomerata,
Haliotis iris, Risellopsis varia, Zediloma, sp., Cookia sulcata, Alcithoe sp.(jaculcides?), Maoricolpus roseus.
- e. Portable artifacts: A small ground pebble adze approaching a 2 B in type came from the top of Level III and the base of Level IV. Two adze roughouts of Duff's type 4 A and one of Duff's type 3 as well as sandstone files are reported by Parker from Level III; only a chip of a highly polished adze was found associated with Level IV.
- f. Architectural features: (For details see Parker 1962).
 Level IV - A small bell-shaped pit, an elongated "bin" store pit, deep oven pits and shallow circular oven scoops are reported.
 Level III- Shallow and elongated (2:1) pit dwellings are associated with small bin-shaped pits on this level.
 Level I - The principal structures of this level are pairs of large rectangular pits with a single side wall buttress in three of the pits and one pit in each pair with a scoop hearth. These dwellings are associated with, or have attached, an underground store pit with a step-down side entrance.
- g. Dating: Level IV appears to be a cooking component of an undefined aspect probably belonging to the Early or Village Maori Phase. Level III would appear to be a settlement component of the Sarah's Gully Aspect belonging to the Experimental or Archaic B Phase. Note that this conclusion is not only based on the similarities of pit types pointed out by Parker, but also on the change in shellfish content of the Levels III and I at this site and the upper and lower five layers of the midden at the Sarah's Gully Settlement site. Level I has been assigned to the Coromandel Aspect of the Developmental or Archaic A Phase.

Curry and Moore Gate Site (N 40/1)

- a. Bibliography: Jolly, R.G.W. and Green, R.C., 1962. "Beach Middens on the Coromandel Coast", N.Z. Arch. Assoc. Newsletter, v.5, no.1, pp.41-42.
Trower, D. "Opito Beach: Two sites", op. cit. pp.43-46.
- b. Setting: on the foredunes facing the beach, some of them rising abruptly to twenty or more feet. The site is on two levels which are separated by a gully that is bisecting the site.
- c. Stratigraphy: Two distinct middens called Upper and Lower which are separated by a small incipient gully.
The Upper Midden has three layers resting on some fifteen feet of dune sand. The lowest cultural deposit is a greasy black compact sand with charcoal and broken oven stones 1' 11" thick designated as Layer 2. It is overlain by a cultural layer of shelly light gray sand called Layer 1, which was 11" thick. Both are sealed by nearly three feet of white windblown sand overburden. The Lower Midden lay in a low foredune fronting on the beach and only several feet above beach level. It consisted of a relatively thin midden band overlain by several feet of dune sand. The midden portion has now been removed by the sea.
- d. Economy: Upper Midden: 32 fragments of fishbone, no moa bone and no bird bone. The following shellfish were recorded:
Frequent - Mytilus canaliculus, Amphidesma subtriangulatum, A. australe, Lunella smaragda, Melagraphia aethiops
Infrequent - Cominella adspersa, Notovola novaehollandiae, Struthiolaria papulosa, Cellana denticulata, C. radians, Cookia sulcata, Haliotis iris.
This sample, unfortunately, was not separated according to two cultural layers, and thus may be somewhat mixed.
Lower Midden: removed by sea before intended sample could be taken.
- e. Portable artifacts: Upper Midden, Layer 1 — a broken polished quadrangular section adze without butt modification, and from a mixed sample of both layers, basalt flakes in the following numbers and sizes: 8 fitting on 10 cm. square, 34 fitting on 8 cm. square, 199 fitting on 6 cm. square, 531 fitting on 4 cm. square; numerous boulders, pebbles and hammerstones; 4 pieces of obsidian from Mayor Island and 9 probably from local Coromandel source, a sandstone file, a fossilized wood piercing tool, and a point leg for a one-piece fishhook with sharply inturned point, which is made from moa bone.
- f. Architectural features: two post holes adjacent to oven.
- g. Dating: impression is that of a late Experimental Phase midden but any designation must be highly tentative and two phases could be represented by two layers.

The Wellman Site Section 27 (N.40/16)

- a. Bibliography: Wellman, H.W., 1962. "Holocene of the North Island of New Zealand: a Coastal Reconnaissance", Trans. of the Royal Soc. of New Zealand, Geology, v.1, no. 5, pp.29-99.

- b. **Setting:** Site is described as a mile west of Opito Point in an exposure near middle of bay. The site extends for about 100 feet. Grid reference places it along side of main stream at centre of bay.
- c. **Stratigraphy:**
- | | | |
|---|---|---------|
| Moderately well-developed soil under scrub | - | 0.2 ft. |
| Light coloured blown sand | - | 1.0 ft. |
| Well-developed occupation layer | - | 2.0 ft. |
| Yellow gritty sand, fragments of charcoal and shell | - | 6.0 ft. |
| As above, with Loiseles pumice | - | 0.2 ft. |
| Shell sand with charcoal fragments | - | 1.0 ft. |
| Shell sand, no charcoal | - | 0.5 ft. |
| Black sand resting on hard sandstone at M.H.W.M. | - | 0.2 ft. |
- d. **Dating:** Depends on age of Loiseles pumice in section, see discussion by Wellman.

First Pohutukawa Midden (N 40/12)

This site, on the foredunes several hundred yards to the south-east of the stream, has been recently reported by Mr. R.G.W. Jolly and he, Mr. C.J. Murdock, and Miss E. Shaw have investigated it more fully. The preliminary report of those investigations are presented in the earlier article by Miss Shaw.

Pohutukawa Flaking Floor (N 40/2)

- a. **Bibliography:** Jolly and Green "Beach Middens on the Coromandel Coast", op. cit., pp. 41-43.
- b. **Setting:** On the foredunes at the south-east end of the bay between two streams that drain the valley behind. This site faces on the northern stream, while the Parker midden described below faces the southern stream. The site is to the south of the ridge leading to the Tahanga hill quarry, but near a sea-washed exposure at the base of this ridge of the same type material as is being exploited at the quarry site.
- c. **Stratigraphy:**
- | | | |
|---------|---|---|
| Layer a | - | a scantily-grassed surface layer of fine sand, 2 to 4 inches deep. |
| Layer b | - | up to 14 inches of dark brown sand containing abundant basalt flakes and other midden material. |
| Layer c | - | a lighter brown dune sand without sign of human occupation. |
- d. **Economy:** At an earlier date from the surface of this site Parker recovered moa which Scarlett (1962) records as Dinornis struthoides, Euryapteryx geranoides, and E. exilis. In the excavation, however, only four pieces of what appear to be sub-fossil bone were recovered from

layer b, and the moa does not appear to have been abundant. Fish bone was also infrequent and only shellfish were plentiful. The following species were recorded as:

Frequent—Amphidesma australe and subtriangulatum, Notovola novaeze-
zelandiae, and Cookia sulcata.

Infrequent—Dosinia anus, Maoricolpus roseus.

- e. Portable artifacts: From layer b. there were 461 basalt flakes from 3 to 11 cm. in maximum dimension, which were recovered along with 11 reject roughout portions of adzes, and twenty roughout portions which seem to have been failures. One is a roughout of a side hafted adze, while the others would be most suitable as stages in the production of various archaic forms of adze. Many broken boulders and hammerstones, one piece of chert and twenty pieces of obsidian were also found in the same area. The size of area sampled was approximately twenty square feet. The obsidian exhibits thirteen pieces of Mayor Island origin and the remainder probably from a local Coromandel source. Further investigations by Mr. R.G.W. Jolly have produced a grooved sinker and from Layer a. or an intermittent sand layer on top of b., a point leg of a composite hook which conforms to the Oruarangi Point type.
- f. Dating: One gains the impression that this is a flaking floor component of either the Developmental or Experimental Phase, but more definite information is needed to confirm this.

Jolly Midden (N 40/17)

- a. Setting: A deeply buried midden exposed in the north face of the southern-most stream on the beach, the level of the base of the midden being almost at the level of the high tide.
- b. Stratigraphy: This midden exhibits several distinct layers but a complete section is not recorded.
- c. Dating: The midden would appear to be early, and contrasts with an unrecorded midden of the Early European Maori Phase at the same level on the opposite side of the stream.

Headland Pa (N 40/15) - large pa at South-eastern end of Opito Bay (Golson
1957: 91)

Tahanga Quarry (N 40/8) - basalt quarry from which most of the material for archaic adzes on the Coromandel Coast comes.

Tahanga Hilltop Pa (N 40/14) with stone wall surrounding it.

These last three listed sites are dealt with by Miss E. Shaw in the earlier article and will not be described here.

Sarah's Gully Settlement (N 40/9)

- a. Bibliography: Golson, J. "Excavations on the Coromandel Peninsula", op. cit. pp. 17-18
 Golson, J. "Culture Change in Prehistoric New Zealand", op. cit., pp. 44-45.
 Golson, J. and Gathercole, P.W., 1962. "The Last Decade in New Zealand Archaeology", Antiquity, v. XXXVI, part 1, p. 172.
- b. Setting: Areas A,B, C and D are on the marine terrace at the back of beach along the eastern end of the Bay known as Sarah's Gully. The sea bank of this terrace is now being eroded by the stream and the midden layers exposed. The drains and burial portions of the site were located on the flat behind the middens running along the stream and the settlement on the low ridge to the south-east just above this flat.
- c. Stratigraphy: Area A-B was laid out in a grid with row H. along the edge of the marine terrace. The rows were divided into squares 8-16 with an eastern extension. The deepest stratification seems to have been up to ten layers found in area H-9, H-10, and H-11. Midway in these deposits, the remains of a structure with sunken floor and postholes was found. Area C to the east of area A-B had some five layers, the lower three containing shell midden, while area D to the west produced a number of adzes, fishhooks, and necklace units from at least four layers. These deposits were "sealed by a layer of wind-blown sand which blanketed the surrounding area, including a small concentration of pits on a low ridge 50 yards away" (Golson and Gathercole 1962:172).
- d. Economy: Moa bone was not plentiful on this site, but that which was found has been listed by Scarlett as belonging to Dinornis giganteus, D. struthoides, and Buryapteryx exilis? Dog and seal bones, however, were abundant in the excavated layers, especially of area A-B. One pelvis fragment of a small moa was found in the charcoal of an oven. Shellfish are not numerous from these deposits but they exhibit similar sorts of stratigraphic changes to those in deposits at the Skipper's Ridge Site. Thus in the upper layers of area A-B there were more mudflat species like Chione and Amphidesma, which occur only in a few fragments in the lower five layers. The mussel, Mytilus canaliculus is infrequent and sporadic in the upper layers but occurs in greater numbers in the lower layers. There is no Cellana denticulata recorded for the upper layers and only a few C. radians, but both these limpets are common in the lower five layers. Nerita melanotragus, Lunella smaragda, and Lepsia haustum occur throughout the sequence, the first two being fairly frequent in layer 7. Haliotis iris, Notovola novae-zelandiae, Zediloma sp. and Neothais scalaris are also recorded from these layers. In area C the shells were predominantly of the rocky shore types with a few mudflat species present, while in area D there were a wide range of infrequently occurring rocky shore types and small numbers of various mudflat species.

- e. Portable artifacts: Evidence for the manufacture of one-piece bait hooks in moa-bone was widely distributed throughout all areas, but in area D, despite the lack of midden depth, the richest deposit of portable artifacts was encountered. This produced adzes of the Duff Type 4A, large numbers of one-piece fishhooks, usually with incurved point, a single unbarbed uniperforate lure hook point, and necklace units of cut bird bone, or cut Dentalium nanum.
- f. Architectural features: In area A, midway in the stratified deposits, traces of a structure with a sunken floor and postholes was encountered, with the badly decayed remains of a post in one of the holes. This has been radiocarbon dated. On the low ridge behind, a total of seven pits and a complex series of postholes was uncovered. Five of the pits are interpreted as storage structures. Two were bin-like, with ledges or rims, but no drains (Size - $2-2\frac{1}{2}$ ft. square and $1-1\frac{1}{2}$ ft. deep); the other three were rectangular, shallow, and drained, with a layer of beach sand resting on the floor of two of them (Size - 6 ft. x 3 ft. x 1-2 ft. deep). Two other shallow pits, of elongated rectangular shape, with post holes in the floor or along the walls, recall the types of dwelling pits found by Parker in Level III at Skipper's Ridge. The complex series of postholes situated on sloping ground formed no apparent plan, but were sealed by a top layer in which there were a number of more recent ovens.
- g. Dating: Charcoal from oven at top of the stratified camping floors and associated with fishhook cores yielded a date of less than 200 radiocarbon years ago. Golson has noted that this single estimation may be untrustworthy, but that the date is archaeologically acceptable. A charcoal sample from the cultural level mantled by the sterile sand in area D, and the same sand which also mantled the pit and drain complex on the ridge behind, gave a date of 600 ± 50 radiocarbon years ago. In area B, a firepit from the upper five layers associated with the moa pelvis gave a date of 590 ± 50 radiocarbon years ago. In area A charcoal from the basal level yielded a result of 650 ± 50 radiocarbon years ago, while the wooden post associated with the structure of next to the earliest stage produced a date of 810 ± 50 radiocarbon years ago. This last result is likely to be too old by the amount that the sample was derived from wood toward the centre of the tree. On the basis of the above information, the lower five layers and pit of area A-B have been assigned to the Coromandel Aspect of the Developmental Phase. The upper five layers and areas C and D have tentatively been assigned to the Sarah's Gully Aspect of the Experimental Phase, along with the pits and post holes on the ridge behind.

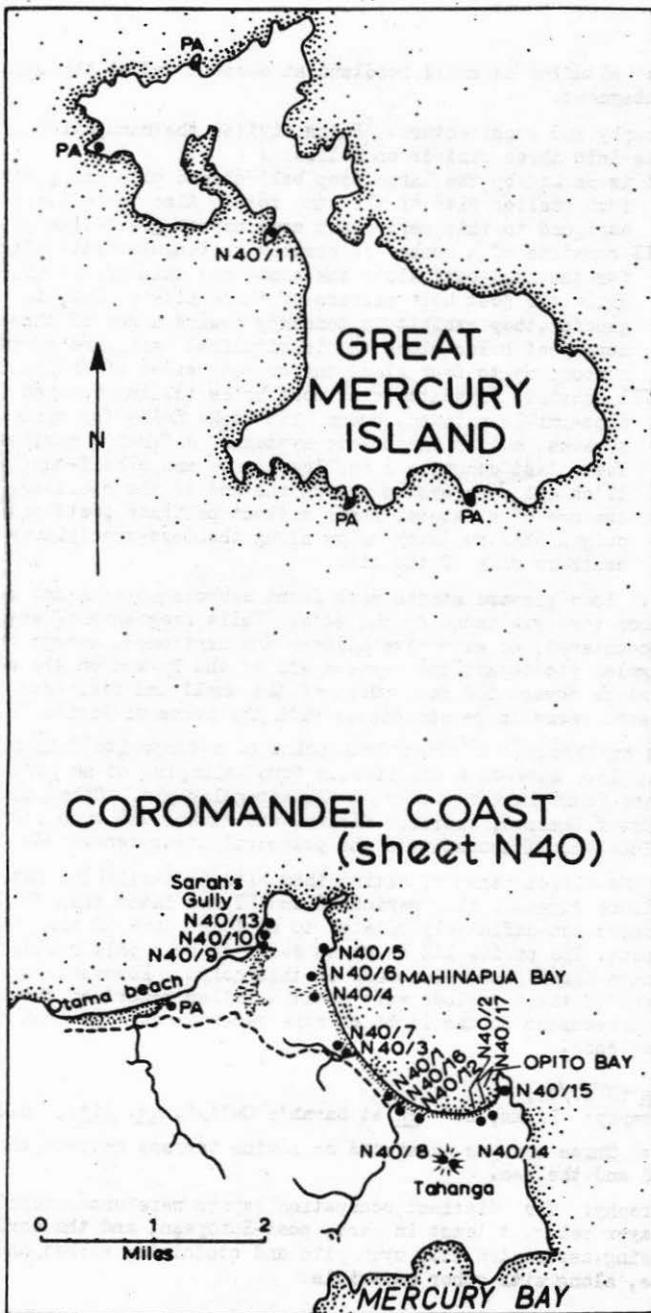
Sarah's Gully Pa (N 40/10)

- a. Bibliography: Golson J., 1957 "Field Archaeology in New Zealand". Journ. of the Polynesian Soc., v. 66, no. 1, plate 4.
 Golson, J. "Excavations on the Coromandel Peninsula", op. cit., pp. 16-17.
 Birks, L. "Pa at Sarah's Gully, Coromandel Peninsula", N.Z. Arch. Assoc. Newsletter, v. 3, no. 2, pp. 16-20.

- b. **Setting:** situated on small headland at eastern end of the Sarah's Gully embayment.
- c. **Stratigraphy and architecture:** Birks divides the occupation of this site into three periods as follows :
 Period I is marked by two large deep bell-shaped pits and probably four smaller pits of the same form. Also tentatively assigned to this period are some narrow grave-like pits.
 Period II consists of a number of shallow rectangular pits aligned for the most part along the east-west axis of the site. While the post hole pattern of these pits varies, in general, they exhibit a tendency toward a row of three or more post holes along the longitudinal axis, and varying numbers up to four along one or both sides of the pit.
 Period III consists of scatters of post holes falling into no discernible pattern, ovens with stake holes for wind screens, and an incomplete system of defensive earthworks. These last comprise a shallow trench and a half-completed ditch and bank system across one end of the headland, and the use of a lateral scarp without palisade posts and only a shallow ditch below along the less-precipitous southern side of the site.
- d. **Economy:** Some gizzard stones were found associated with one oven, but no moa bone was found on the site. While fragments of shell were encountered, no extensive middens are mentioned, except in an irregular pit toward the western end of the Pa and on the edge of the slope toward the sea. Most of the shell and fish bone encountered seems to be associated with the ovens of Period III.
- e. **Portable artifacts:** A barbed bone point of a composite fishhook, and a complete adze of a utilitarian form belonging to no particular type, were found in the midden of the irregular pit. Other than this, adze fragments, obsidian flakes, and flakes and oven stone in the local basalt, constitute the principal items recovered.
- f. **Dating:** No direct means of dating this site is available, but the pit evidence suggests that periods I and II are later than the Sarah's Gully Aspect but definitely related to at least some of the pits from that aspect. The period III evidence seems to be a pale reflection of the Classic Maori Phase elsewhere on this coast. However, any definite assignment of these periods must await a fuller report of the evidence and its assessment in the light of more recent knowledge from the Lauri Point sequence.

Sarah's Midden (N 40/13)

- a. **Bibliography:** Birks, L. "Pa at Sarah's Gully", op. cit., p.20.
- b. **Setting:** Three squares excavated on ravine terrace between the pa headland and the sea.
- c. **Stratigraphy:** Two distinct occupation layers were encountered, the upper layer being, at least in part, post-European, and the earlier layer being associated with oven pits and containing worked and unworked moa bone, along with other materials.



LOCATIONS OF PRINCIPAL SITES AT OPITO, SARAH'S GULLY
AND GREAT MERCURY ISLAND

- d. Dating: The upper level apparently belongs to the Early European Maori Phase, but the lower layer can not be assigned to any definite phase or aspect on the evidence available.

Sting Ray Point Pa (Matakawau Point) (N 40/11)

- a. Bibliography: Golson, J. 1955. "New Zealand Archaeological Association", Jour. of the Polynesian Soc., vol. 64, pp. 349-351.
- b. Setting: "A trench 64 feet long and 6 feet wide was laid out across the single terrace on the south side of one of the major pa, stretching almost from the summit of the pa to the cliff edge and taking in a rectangular pit 20 feet long and ten feet wide which was clearly visible on the surface."
- c. Stratigraphy and architecture: There appears to have been at least three building periods represented in the area of the visible pit, labelled A. At first a visible pit A was cut into the ground with its floor at a higher level than at present. At this time it was associated with what are now perched drains resulting from the cutting of Pit B and recutting Pit A. The cutting of Pit B, of which there was no surface indication, made obsolete the drains of Pit A, and this pit was cut to a new floor level and the drainage systems for both pits were linked. End buttresses occur in both pits during this period. A third period is represented by the artificial infilling of Pit B and the erection in that fill of posts which may have belonged to the palisade. W. Ambrose has suggested that Pit A may have continued to function during this period, hence the need for the stone covers over that portion of the drain used by Pit A which runs through Pit B. A final period is represented by the natural silting of Pit A.
- d. Dating: This type of pit with end buttresses and interior drains is widely encountered, being found at Kauri Point in period II, on Site N 30/3 at Haratonga Bay on Great Barrier Island, and on the recently-excavated Taniwha Pa (N 52/1) east of Lake Waikare. It would appear to be associated with a single ditch defences, especially those of the ring ditch type.

OTERAWA PA, KOPUARAHI

by Robin T. Murdock

Many of the artifacts in my father's collection listed by Mr. Green in a preceding article under the name of Kopuarahi come from an island pa in the middle of a swampy area near the Piako River. The pa is built up of layers of shell to a depth of about five feet in the center. Unfortunately most of the pa has been destroyed and the artifacts found are limited because of this. The accompanying sketch map gives a general impression of the layout of the pa which is thought to have been named Oterewa.